UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,048	08/18/2003	William F. Lauersdorf	FIB 0093 I2/14309	3112

51635 7590 11/17/2005

DINSMORE & SHOHL LLP
ONE DAYTON CENTRE, ONE SOUTH MAIN STREET
SUITE 1300
DAYTON, OH 45402-2023

EXAMINER	
MUSSER, BARBARA J	
ART UNIT	**PAPER NUMBER**
1733	

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/643,048	LAUERSDORF ET AL.	
	Examiner	Art Unit	
	Barbara J. Musser	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-5, 9-11, 13-15, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campanella et al. in view of Skogman (U.S. Patent 5,522,340) and Parish.

Campanella et al. discloses a method of making a composite by applying a gel coat to a mold, partially curing it, applying a skin laminate to the gel coat, applying fiber reinforcement over the skin coating, closing the mold, applying resin to the fiber reinforcement, curing the resin, opening the mold and removing the composite.(Col. 6, ll. 5-29) The skin laminate is typically made of vinyl esters or vinyl esters mixed with unsaturated polyesters.(Col. 5, ll. 40-45) The reference does not disclose curing the skin laminate prior to applying the fiber reinforcement. Skogman discloses that in a conventional process having a gel coat, skin laminate, and fiber reinforcement, the skin laminate is typically cured prior to application of the fiber reinforcement.(Col. 5, ll. 28-37) It would have been obvious to one of ordinary skill in the art at the time the invention was made to cure the skin laminate prior to applying the fiber reinforcement since Skogman shows this is conventional in the fiber reinforcing arts when using gel coats, skin laminates, and fiber reinforcement.

The references do not disclose the specific composition used to make the skin laminate. Parish discloses a composition containing 40-42% vinyl ester, 30-36% polyester, 0-40% monomer, 1-15% thickener, 0-2% accelerator, 5-35% filler, and 0-50% catalyst.(Col. 2, ll. 52- Col. 3, ll. 15; Col. 3, ll. 61-63) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the composition of Parish in combination with the continuous strand fiber mat of Campanella and Skogman as the skin laminate of Campanella et al. since the composition uses a minimum of volatile solvents and can enhance the surface appearance of composites(Col. 3, ll. 20-42) which is desired by Campanella et al. which discloses that the purpose of skin laminates is to improve the surface smoothness of the product(Col. 5, ll. 32-33) and to use this in combination with the strand fiber mat disclosed in Campanella since it might be difficult to evenly apply a composition containing the high fiber content desired by Campanella.(Col. 5, ll. 43-47) Since the composition of Parish is the same as that of applicant, it would have the same effect, namely causing the composite to have an improved surface finish. Since the claim does not require the skin laminate to be fully cured, the partially cured skin laminate of Campanella is considered to read on the claims.

Regarding claim 2, since the mold can be closed, one in the art would understand that it would be composed of at least two parts.(Col. 6, ll. 10-11)

Regarding claim 3, the application of pressure to the mold appears to be well-known and conventional in general in the composite arts and it would have been

obvious to one of ordinary skill in the art at the time the invention was made to apply pressure to the mold since such is well-known and conventional in the composite arts.

Regarding claim 4, since the resin is injected under vacuum, one in the art would appreciate that pressure would be applied to the resin to cause it to flow into the mold.(Col. 6, ll. 11)

Regarding claim 5, since the entire process occurs under a vacuum, one in the art would understand that a vacuum was applied.(Col. 6, ll. 25)

Regarding claim 9, the closed mold process is a resin transfer molding process.(Col. 5, ll. 7)

Regarding claim 10, Parish discloses the accelerator is copper naphthanate.(Col. 2, ll. 60-61)

Regarding claim 11, while Parish does not disclose the specific fillers claimed, it is clear that conventional fillers can be used. Campanella et al. discloses that conventional fillers include mica.(Col. 4, ll. 48) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use any conventional filler in the composition of Parish in the process of Campanella et al. since they are well-known and conventional fillers and since Campanella et al. discloses mica is an alternative to talc, used in Parish.(Col. 4, ll. 48)

Regarding claim 13, Parish discloses a thixotropic clay.(Col. 2, ll. 58)

Regarding claims 14 and 17, Parish discloses the composition can contain 0-1% fumed silica.(Col. 4, ll. 46)

Regarding claim 15, Parish discloses the catalyst can be methyl ethyl ketone peroxide.(Col. 3, ll. 5)

Regarding claims 18 and 19, the addition of a second layer of fiberglass, resin, and skin laminate appear to be well-known and conventional in the art and it would have been obvious to use a second layer of fiberglass ,resin, and skin laminate since such as well-known and conventional in the composite arts.

3. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 1 above, and further in view of Haraldsson et al.(U.S. Patent 6,558,608)

The references cited above do not disclose using a vacuum bag to form a vacuum in the mold. Haraldsson et al. discloses a method of forming composite articles by applying the layers and then applying a vacuum bag to the mold(Col. 1, ll. 67-Col. 2, ll. 1; Col. 2, ll. 47-48) in a vacuum assisted resin transfer process, the same type of process as that of Campanella.(Col. 5, ll. 7) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a vacuum bag to apply a vacuum in the process of Campanella et al. and Parish since they do not disclose how the vacuum is applied and since Haraldsson et al. shows it is a well-known and conventional method of applying a vacuum to composite fiberglass articles in the same type of process as that of Campanella et al..(Col. 1, ll. 67- Col. 2, ll. 47-48)

4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 11 above, and further in view of Kia et al.(U.S. Publication 2004/0038059).

The references cited above do not disclose the filler being hollow microspheres. Kia et al. discloses a method of making a composite using a gel coat, skin laminate(barrier coating), and fiberglass layer impregnated with resin wherein hollow glass microspheres are used as a filler in the skin laminate to reduce the density.(Abstract; [0031]-[0032]) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use hollow glass microspheres as the filler in the skin laminate of Campanella et al. and Parish since this would reduce the density of the final product([0031]).

5. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Campanella et al., Skogman, and Comstock et al.(U.S. Patent 4,288,571).

Campanella et al. discloses a method of making a composite by applying a gel coat to a mold, partially curing it, applying a skin laminate to the gel coat, applying fiber reinforcement over the skin coating, closing the mold, applying resin to the fiber reinforcement, curing the resin, opening the mold and removing the composite.(Col. 6, ll. 5-29) The skin laminate is typically made of vinyl esters or vinyl esters mixed with unsaturated polyesters with a high fiber content.(Col. 5, ll. 40-45) The reference does not disclose curing the skin laminate prior to applying the fiber reinforcement. Skogman discloses that in a conventional process having a gel coat, skin laminate, and fiber reinforcement, the skin laminate is typically cured prior to application of the fiber reinforcement.(Col. 5, ll. 28-37) It would have been obvious to one of ordinary skill in the art at the time the invention was made to cure the skin laminate prior to applying the

fiber reinforcement since Skogman shows this is conventional in the fiber reinforcing arts when using gel coats, skin laminates, and fiber reinforcement.

The references do not disclose the specific composition used to make the skin laminate. Comstock et al. discloses a molding composition containing an unsaturated polyester, vinyl ester, monomer, fillers, thickener, and accelerator.(Col. 1, ll. 57-64; Col. 5, ll. 32-33; Col. 6, ll. 3-8, 30-35, 52-53) The composition can be used to form attractive thermoset articles which are receptive to paint.(Col. 1, ll. 15-24) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the composition of Comstock et al. as the skin laminate of Campanella et al. and Skogman since Campanella et al. discloses that conventionally skin laminates contain vinyl ester/unsaturated polyester mixes with high amounts of fibers, and since it can have excellent surface properties and smoothness(Col. 1, ll. 20-21) which is desired by Campanella et al. which discloses that the purpose of skin laminates is to improve the surface smoothness of the product.(Col. 5, ll. 32-33) Since the composition of Comstock et al. is the same as that of applicant, it would have the same effect, namely causing the composite to have an improved surface finish. While Comstock et al. states the percentages in terms of parts by weight polyester, a conversion shows that Comstock et al. discloses 14-85% polyester, 1-42% vinyl ester, 9.4-58% monomer, 0.4-39% thickener, 2-73% filler, and 0.7-4% accelerator.(Col. 1, ll. 59-62; Col. 6, ll. 4-6, 27-30, 33-35, 52-55).

Response to Arguments

6. Applicant's arguments filed 8/17/05 have been fully considered but they are not persuasive.

Regarding applicant's argument that replacing the composition of Campanella with that of Parish would defeat Campanella's purpose since it does not include any fiber content, Campanella discloses the fibers can be short or can be a continuous strand mat, indicating they are not part of the composition.

Regarding applicant's argument that Comstock's material would not be suitable for use as a skin laminate since it is a sheet molding compound, applicant has not shown what characteristics of the composition would require to it be molded under pressure. Additionally, a thin layer of material can cure quickly under different conditions that a thick slab of material. Applicant has not provided any evidence that the composition of Comstock requires pressure to cure.

Regarding applicant's argument that Campanella does not disclose curing the skin laminate prior to applying the fiber reinforcement, Skogman shows that this appears to be conventional in the same type of arts as Campanella.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara J. Musser whose telephone number is (571) 272-1222. The examiner can normally be reached on Monday-Thursday; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Dunn can be reached on (571)-272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BJM

SAM CHUAN YAO
PRIMARY EXAMINER